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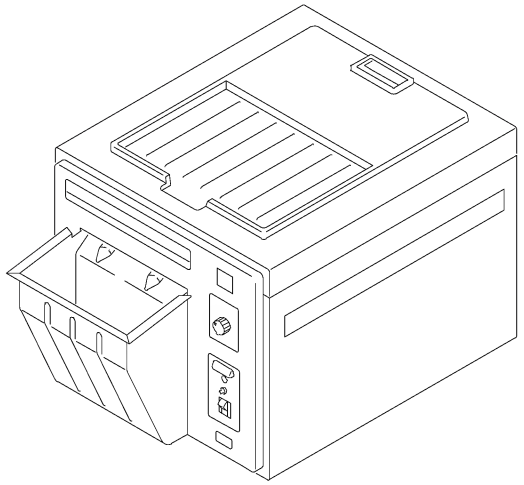
SITE SPECIFICATIONS
for the
Kodak M35 Series *X-Omat* PROCESSORS



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Warning

To avoid hazardous conditions, keep floors and floor coverings around your KODAK X-OMAT Processor and associated drains clean and dry at all times. Any accumulation of fluids from mixing tanks, drain lines, etc, should be cleaned up immediately. In the event of an accumulation of liquid due to backup, overflow, or other malfunctions of the drain associated with your X-OMAT Processor, call a plumber or other contractor to correct any problem with the drain. Kodak accepts no responsibility or liability whatsoever for the serviceability of any drain connected to or associated with a KODAK X-OMAT Processor. Such drains are the sole responsibility of the customer.

Note

The illustrations in this publication show a KODAK *M35A* Processor. Other *M35 Series* X-OMAT Processors are the same size and similar in appearance.

Certification

The following Agencies have approved the Processor:		The Processor meets the following EMI limits:
UL	listed to Standard No. 122	FCC Part 15, Class A Limits
CSA	certified to Standard C22.2, No. 950-M89	C108.8-M1983 of Canada, Class A Limits
		Directive 87/308/EEC and EN 5502 of the ECC

Checklist

Section	Topic	Reference Page	Completed
Architectural	Processor	4	√
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Radio Interference

Caution

This equipment generates, uses, and can radiate radio-frequency energy. If the equipment is not installed and used according to the instructions, it may cause interference to radio communications. The equipment has been tested and found to comply with the limits for a *Class A* computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at the user's own expense will be required to take whatever measures may be required to correct the interference.

This digital apparatus does not exceed the *Class A* limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Section 1: Architectural

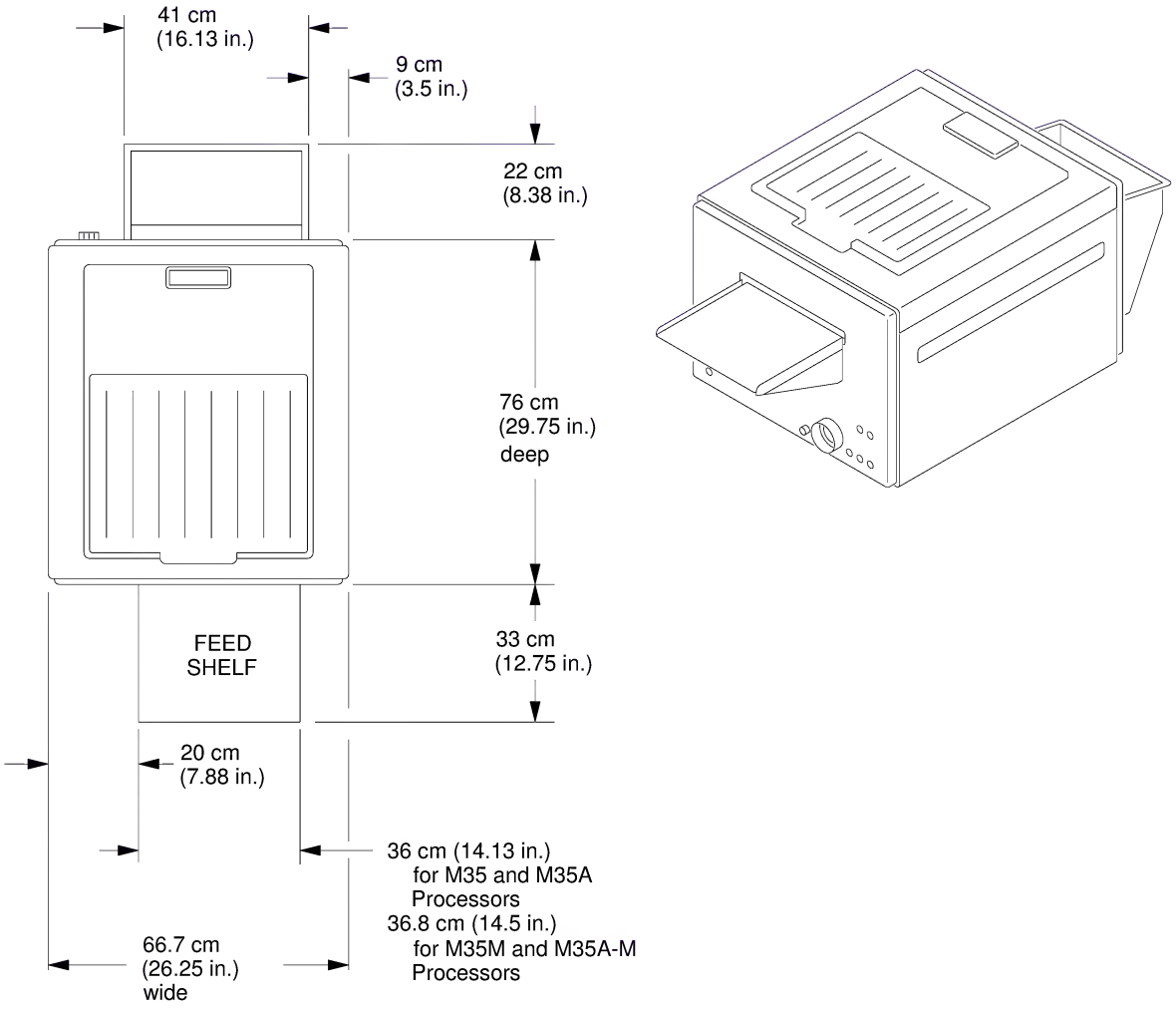
Parts

Part No.	Description	Quantity	How to obtain the part
261413	Seismic Kit, for use on the Processor or the Stand	1	If necessary, the customer may order these Kits from Kodak.
808 1176*	KODAK *M35/M43* X-OMAT Mounting Stand	1	
650938	Light-Lock Gasket for a Through-the-Wall Installation	1	These parts are packed with the Processor. See Page 9.
-	Hooks, Bolts, Nuts, and Washers for a Through-the-Wall Installation	2 - 4	
-	Plywood or equivalent material for a Through-the-Wall Installation	1	The customer must obtain the material locally.

* This item is a catalog number.

Specifications

Processor



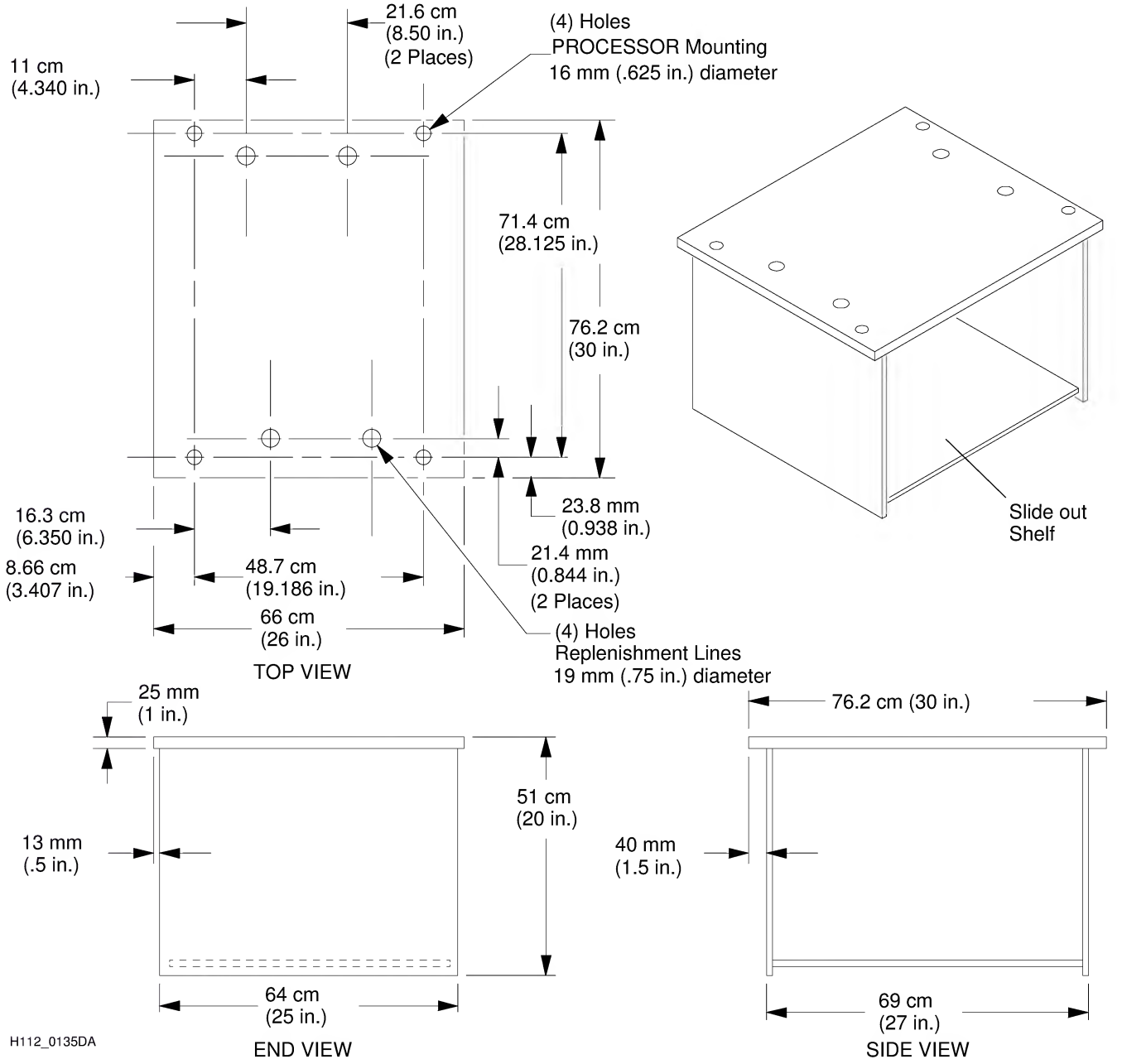
Specifications

Specifications of the Shipping Crate and Processor			Weight of the Processor	
Dimensions	Weight		With Solution	Without Solution
89 x 81 x 97 cm (35 x 32 x 38 in.)	108 kg (240 lb)		113 kg (250 lb)	90 kg (200 lb)

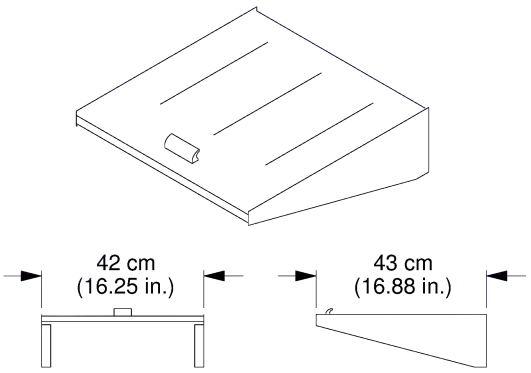
Processor Stand

Use a rigid stand that can support a minimum of 225 kg (500 pounds) with the KODAK *M35 Series* X-OMAT Processor, such as the KODAK *M35/M43* X-OMAT Mounting Stand, CAT No. 808 1176.

For maximum Processor stability, bolt the Processor to the stand. Level the stand and fasten it to the floor. Observe all local codes. The space in the base of the stand is large enough for a KODAK Developer-Fixer Replenisher Tank Set, Model M7, CAT No. 150 0537.



Lighttight Feed Tray



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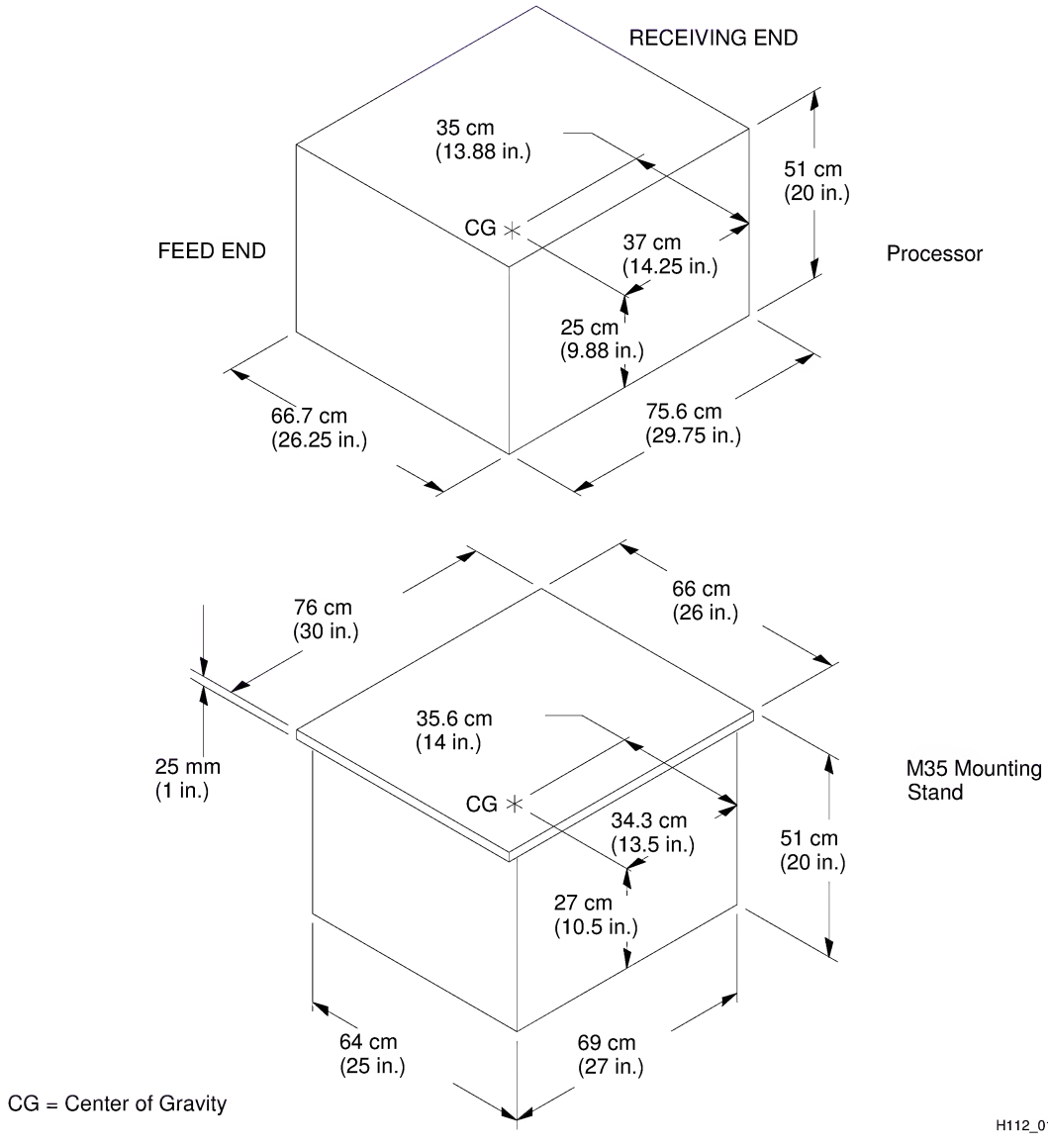
The optional KODAK *M35/M35A* X-OMAT Lighttight Feed Tray, Part No. 246558 is available.

Important

You cannot feed 2 sheets of 18 x 24 cm film side by side in the Lighttight Feed Tray.

Center of Gravity



CG = Center of Gravity

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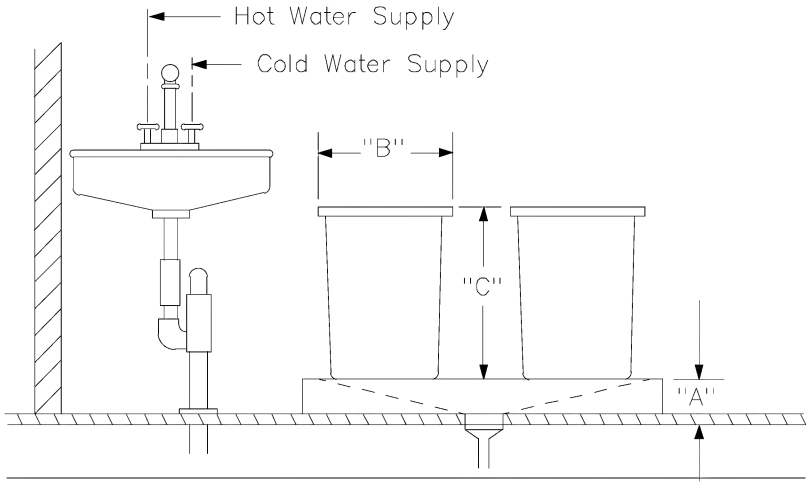
Access and Ceiling Requirements

Important

If these access requirements are not provided, service time and cost may increase.

Maintenance and Operation Access Requirements		
Description	**Recommended Minimum Distances**	**Symbol (See the Figure on Page 17)**
Drive side of Processor	91 cm (36 in.)	R
Nondrive side of Processor	91 cm (36 in.)	S
Dryer side of Processor	91 cm (36 in.)	T
Feed end of Processor	91 cm (36 in.)	U
Above the Processor	91 cm (36 in.)	
Area for 14-gallon replenishment tanks	61 x 127 cm (24 x 50 in.)	D x E
Area for 30-gallon replenishment tanks	61 x 153 cm (24 x 60 in.)	D x E

Replenishment Tanks



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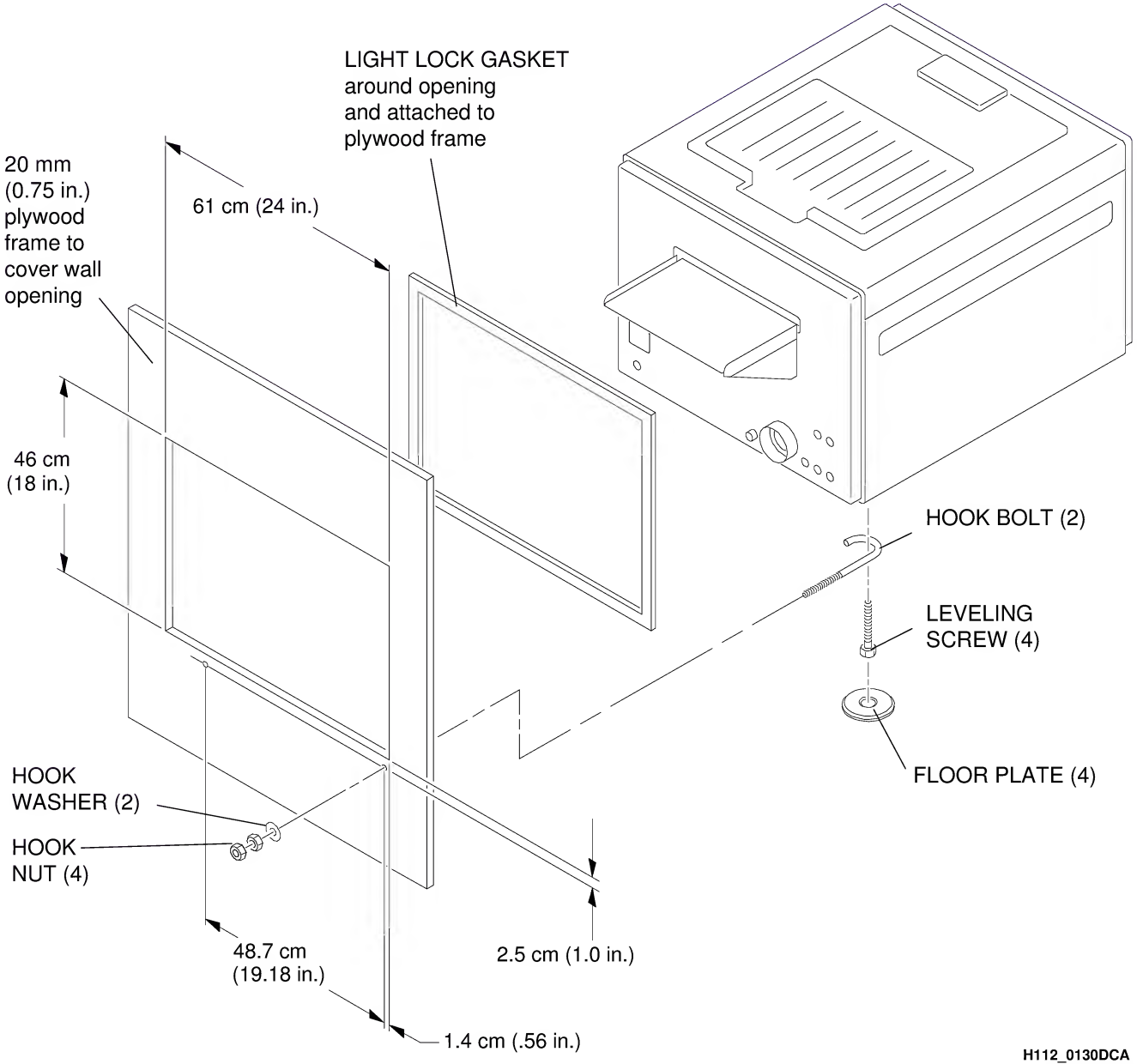
Subject	Requirements			
Position of the Tanks	Locate the Tanks close to the water supply for mixing chemicals. Kodak provides 2 Replenishment Strainers to be installed in the Hoses between the Tanks and the Processor during installation.			
Dimensions		**8 gallon**	**14 gallon**	**30 gallon**
	Diameter of a Tank “B”	29 x 43 cm (12 x 17 in.)	43 cm (17 in.)	56 cm (22 in.)
	Height of a Tank “C”	32 cm (12½ in)	58 cm (23 in.)	70.5 cm (27¾ in.)
	Floor area of 2 Tank (See Page 17, “D” and “E”)	-	61 x 127 cm (24 x 50 in.)	61 x 153 cm (24 x 60 in.)
	Maximum Platform Height (See Page 17, “A”)	-	48 cm (17 in.)	35 cm (14 in.)

Opening for a Through-the-Wall Installation

Materials Needed for a New Through-the-Wall Installation:



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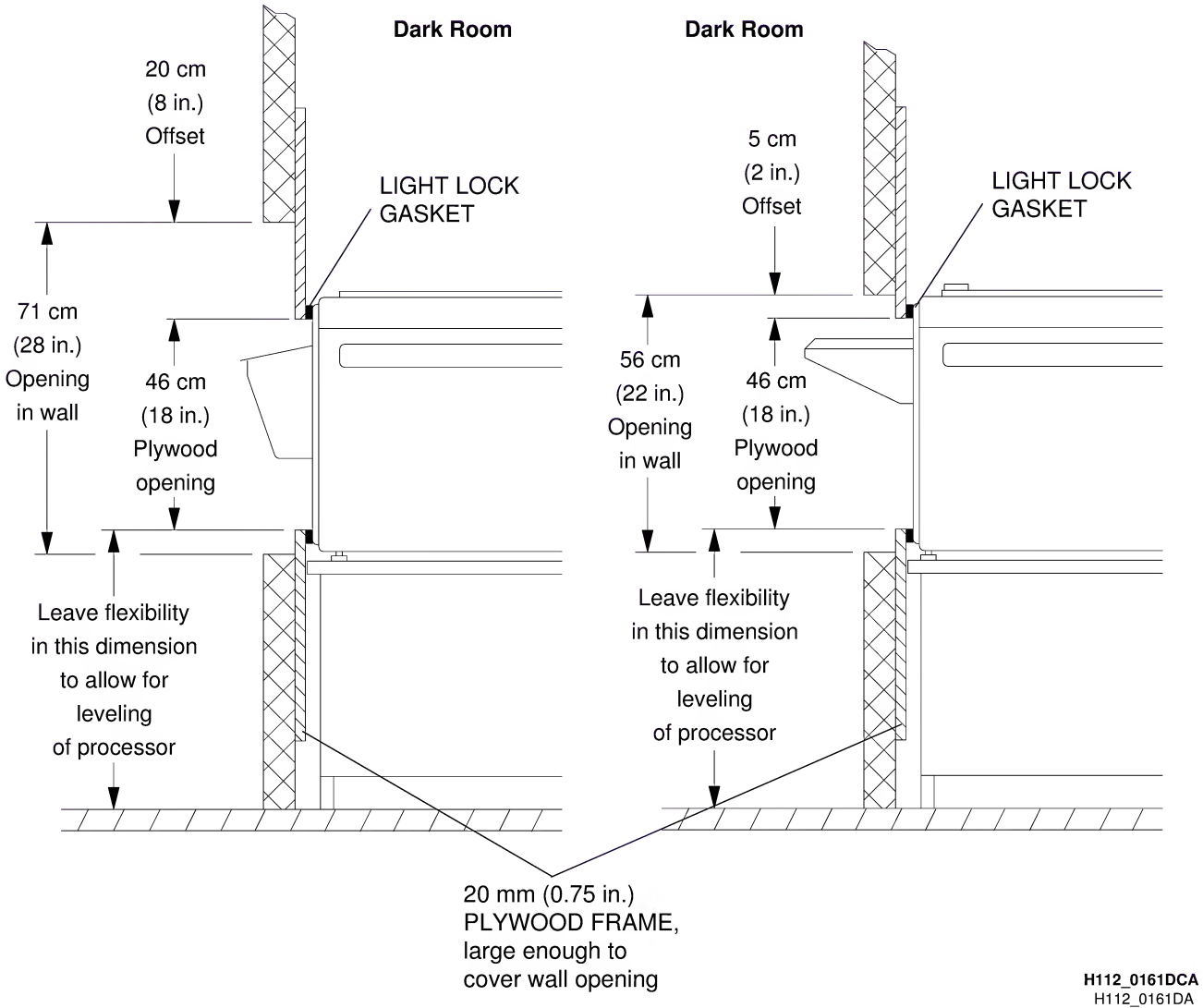
Wall Installations:

Receiving Bin Through the Wall

Feed Shelf Through the Wall



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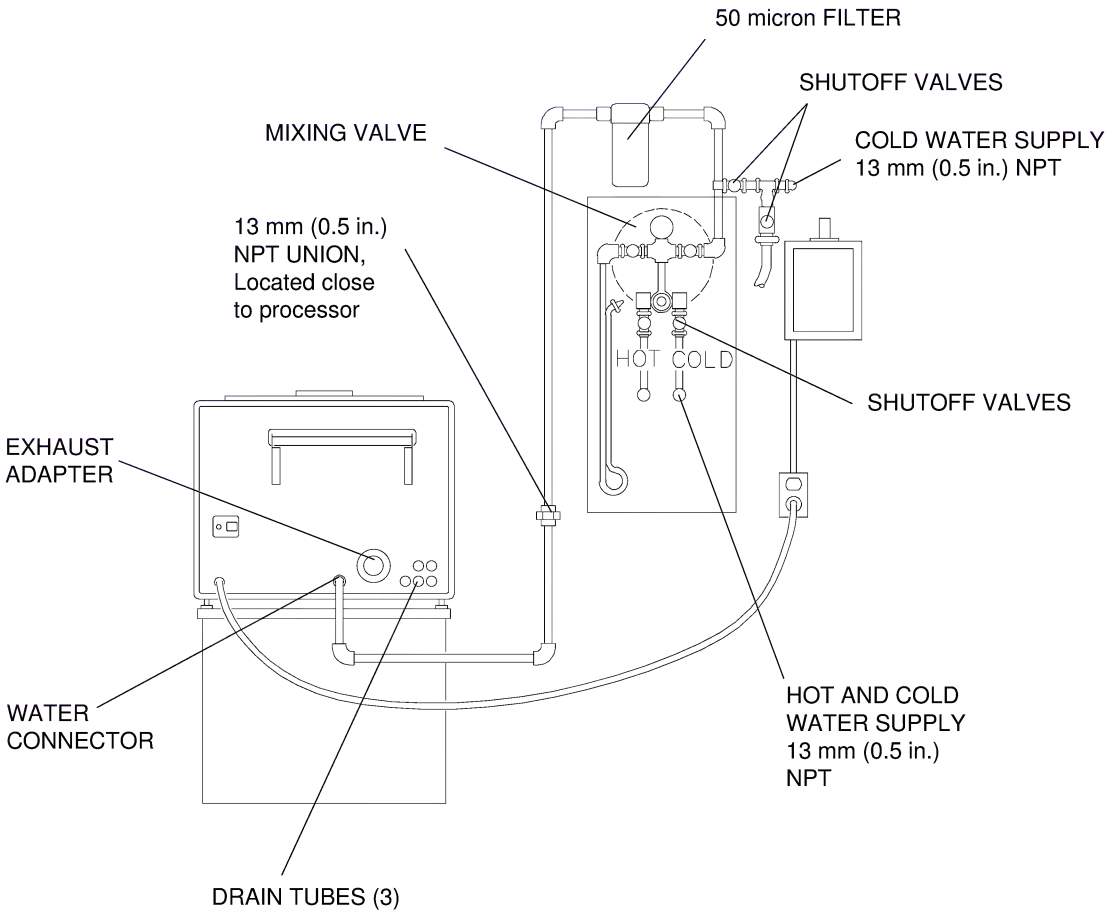
Section 2: Plumbing

Parts



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Part No.	Description	Quantity	How to obtain the part
452990	⅜ -in. Tubing for the Replenishment System	Order by the foot.	The customer can obtain this Tubing or Valve locally or order it fromKodak.
467621	½ -in. NPT KODAK Thermostatic Mixing Valve	1	
246802	Hose Clamp for the Drains	3	These parts are packed with the Processor.
246800	Hose Clamp for the Replenishment Hoses	6	
472261	Replenishment Strainer	2	
551400	⅜ -in. NPTM Water Connector	1	
760476	½ -in. Drain Tube	5.50 m (18 ft)	

You may find the following parts useful in installing the Processor. They are not available from Kodak.

- ½ -in. NPT Check Valve
- ½ -in. NPT Union
- 2 ½ -in. NPT Shutoff Valves
- An In-line Thermometer

Catalog Numbers

Tank Kit	Replenisher Tank Size			Silver Recovery Unit	
	8 gallon	14 gallon	30 gallon		
KODAK Developer Replenisher Tank Kit	-	151 1740	102 2987	KODAK Chemical Recovery Cartridge, Model II	173 4953
KODAK Fixer Replenisher Tank Kit	-	151 1765	102 2961	KODAK Chemical Recovery Cartridge, Junior Model II	166 9431
KODAK Developer-Fixer Replenisher Tank Set, Model M7 - Can be used with the optional Mounting Stand, CAT No. 808 1176.	150 0537	-	-	KODAK Circulating Unit, Model II	175 0868

Note

A Tubing Adapter, ½ -in. to ¼ -in. ID, Part No. 555561, is needed to connect the above silver recovery units to an M35, M35A, M35-M, or M35A-M Processor.

Specifications

Subject	Requirements	
Codes	**Warning** All plumbing requirements must comply with local and national codes. Iron piping is not recommended.	
Drain	**Warning** All drain material must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent. The Drain must have a minimum diameter of 7.6 cm (3 in.) and no obstructions.	
	Minimum diameter	7.6 cm (3 in.)
	Capacity	1 L/min (¼ gal/min) during normal operation 40 L/min (10½ gal/min) for draining all 3 solutions together 13.2 L/min (3½ gal/min) if each solution is drained separately
	Distance from the Processor	1.5 m (60 in.) maximum
	Height from the floor	flush with the floor with the drain lines sloping gradually down to the floor drain
	Hoses	Drain Tubing is packed with the Processor.
	Drain	Do not make a solid connections between the Hoses and the Drain. Use corrosive resistant connections. If elbows are necessary to direct the Hoses into the Drain, the customer can order Elbows from Kodak.
Water Supply	Location	accessible to both the Processor and the Replenishment Tanks
	Temperature	4 - 30˚C (40 - 85˚F) If the temperature of the water supply is higher than 30˚C (85˚F), install a water chiller. Kodak suggests a tempered water supply for cleaning the Processor and for mixing chemicals manually.
	Pressure	138 - 448 kPa (20 - 65 psi) If necessary, install a Pressure Regulator and Gauge.
	Flow volume	Controlled within the Processor to 9.5 L/min (¼ gal/min), +10% -0%
	Filtration	50-micron Water Filter in the input water line
	Check Valve or Vacuum Breaker	The Processor has an internal 20 mm (0.8 in.) water gap in the wash supply system. A Check Valve should not be necessary, unless local codes require one.

Section 3: Electrical

Specifications

<table>
<tr><th>Subject</th><th colspan="6">Requirements</th></tr>
<tr><td>Basic Service</td><td colspan="6">Warning
Earth ground is required.
All electrical service must comply with local and national codes.</td></tr>
<tr><td>Suggested Service for most U.S. sites</td><td colspan="6">120 V, 20 A, 50/60 Hz, 2000 Watts, 2 wires. This configuration is frequently referred to as single phase.</td></tr>
<tr><td rowspan="5">Other Service Options</td><td colspan="2">Voltage</td><td>Watts</td><td>Hertz</td><td>Amps</td><td>Service</td></tr>
<tr><td>200</td><td>208</td><td>3000</td><td>50/60</td><td>20</td><td>2 wires, single phase</td></tr>
<tr><td>220</td><td>240</td><td>3300</td><td>50/60</td><td>20</td><td>2 wires, single phase</td></tr>
<tr><td>220</td><td></td><td>3300</td><td>50/60</td><td>20</td><td>3 wires, 2-phase</td></tr>
<tr><td>240</td><td></td><td>3800</td><td>50/60</td><td>20</td><td>3 wires, 2-phase</td></tr>
<tr><td rowspan="3">Main Power Disconnect Switch</td><td colspan="6">This Switch must be:
• located on a wall adjacent to the Processor, within 2 m (7 ft), in the light room area
• visible and accessible from the Processor
• a safe distance from water</td></tr>
<tr><td colspan="6">For M35A and M35A-M Processors, use either a single-pole, thermomagnetic circuit breaker or a fused disconnect switch</td></tr>
<tr><td colspan="6">For M35A and M35A-M Processors, use either a fused disconnect switch or a 2-pole, thermomagnetic circuit breaker with a solid neutral and a common trip</td></tr>
</table>

Section 4: Heating, Ventilation, and Air Conditioning

Parts

Part No.	Description	Quantity	How to obtain the part
264503	KODAK Auxiliary Ventilation Fan Kit / 110 V Includes: Air Gap Assembly 264519	1	The customer can order these parts from Kodak or obtain equivalent parts locally.
264519	Air Gap Assembly	1	

Specifications

Subject	Requirements		
Room	Temperature	15 - 30˚C (59 - 86˚F)	
	Relative Humidity	15 - 76%	
	Ventilation	10 room air exchanges/hr for a room that is 3 x 3 x 3 m (10 x 10 x 10 ft)	
Building Exhaust System	The system must have the following ratings:		
	Volume - full load	2,124 L/min (75 ft^3 /min) maximum, 24 hours per day	
	Temperature	66˚C (150˚F) maximum	
	Heat Load to the Room with the Processor	3400 kJ/hr (3200 BTU/hr)	
	Exhaust Duct from the Processor	Diameter = 7.6 cm (3 in.)	
	Exhaust Duct from the Building with an Adjustable Air Gap	**Negative Pressure***	
		7.6 cm (3 in.) Duct	0.76 - 1.02 mm (0.03 - 0.04 in.) of water
		10.2 cm (4 in.) Duct	0.25 - 0.51 mm (0.01 - 0.02 in.) of water
		*See the next page for the procedure for checking the negative pressure. If the negative pressure is not correct, install an Auxiliary Ventilation Fan must be installed.	

Note

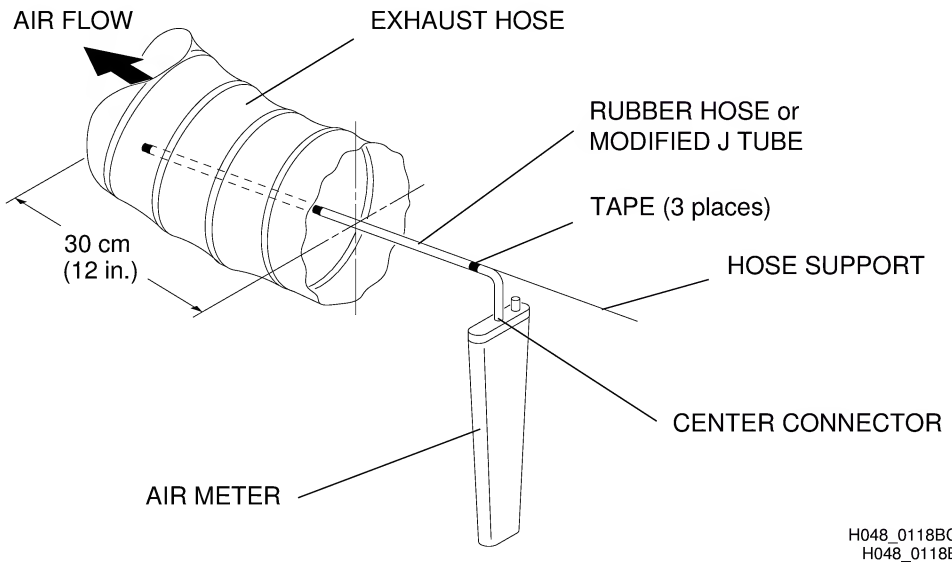
For through-the-wall installations, the air pressure in the dark room must be greater than the air pressure in the light room to prevent air flowing through the Processor into the dark room. When the air pressure is correctly balanced and the Processor is correctly vented, the:

- chemical fumes and vapors will be contained
- film artifacts will be reduced

Procedure for Checking the Negative Pressure

Important

- If the venting is not correct, fumes will corrode the equipment. Do not install the Processor or accessories if the venting is not correct. Check local codes for venting requirements.
- The airflow is correct when the fumes are flowing out of the Processor through the Exhaust Hose. Before installing the Processor, or when checking the static pressure later, do the following procedure to check that the airflow is correct.



Do the following procedure, using an Air Meter TL-2431, to check that the venting is correct.

[1] If the Processor is installed, de-energize the Processor.

[2] Disconnect the Exhaust Hose from the Processor Exhaust Adapter.

[3] Place the Rubber Hose on the Center Connector of the Air Meter.

[4] If a replenishment J Tube, Part No. 592380, is available, do the following. If not, advance to Step 5.

(a) Cut off and discard the curved portion of the replenishment J Tube.

(b) Install the tapered end of the replenishment J Tube into the Rubber Hose.

(c) Advance to Step 7.

[5] If a replenishment J Tube is not available, align a Hose Support, such as a straightened coat hanger, next to the Rubber Hose. The ends of the Hose Support and the Rubber Hose must be together.

[6] Place tape around the Hose Support and the Rubber Hose at 3 points. See the illustration.

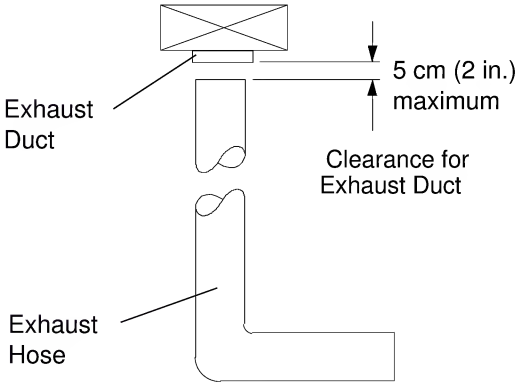
Important

The tape should not inhibit the airflow through the Rubber Hose.

[7] Insert the replenishment J Tube or the Rubber Hose into the Exhaust Hose until the end is 30 cm (12 in.) from the end of the Exhaust Hose.

Measuring the Static Pressure

Negative Static Pressure, Water Head		
Duct Diameter	**MIN**	**MAX**
76 mm (3 in.)	0.76 mm (0.03 in.)	1.02 mm (0.04 in.)
102 mm (4 in.)	0.25 mm (0.01 in.)	0.51 mm (0.02 in.)



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Important

The Rubber Hose or J Tube must be in the center of the Exhaust Duct.

[8] Hold the Air Meter vertical, and record the average of several readings.

[9] Compare the average reading with the table:

[10] Adjust one of the following to obtain the required reading:

(a) the damper (or fan) in the building ventilation system or

(b) the clearance between the Exhaust Duct and the Exhaust Hose to 5 cm (2 in.); see the illustration.

[11] If the airflow reading is still not correct, contact the sales representative and the customer to correct the venting.

[12] When the airflow reading is the same as the measurements in the table, connect all the hoses.

[13] If the Processor has been installed, install the Covers and Panels on the Processor.

Important

- Inform the customer that all Covers and Panels must be installed while the Processor is energized.
- The darkroom should have 10 room air exchanges per hour.
- If the Processor is installed through the darkroom wall, it is most important that the air pressure in the darkroom is greater than the air pressure of the area surrounding the darkroom.

[14] Do the following to check the airflow at the Feed Shelf:

(a) If the Processor is installed, de-energize the Processor.

(b) Hold a piece of tissue paper in front of the Feed Shelf.

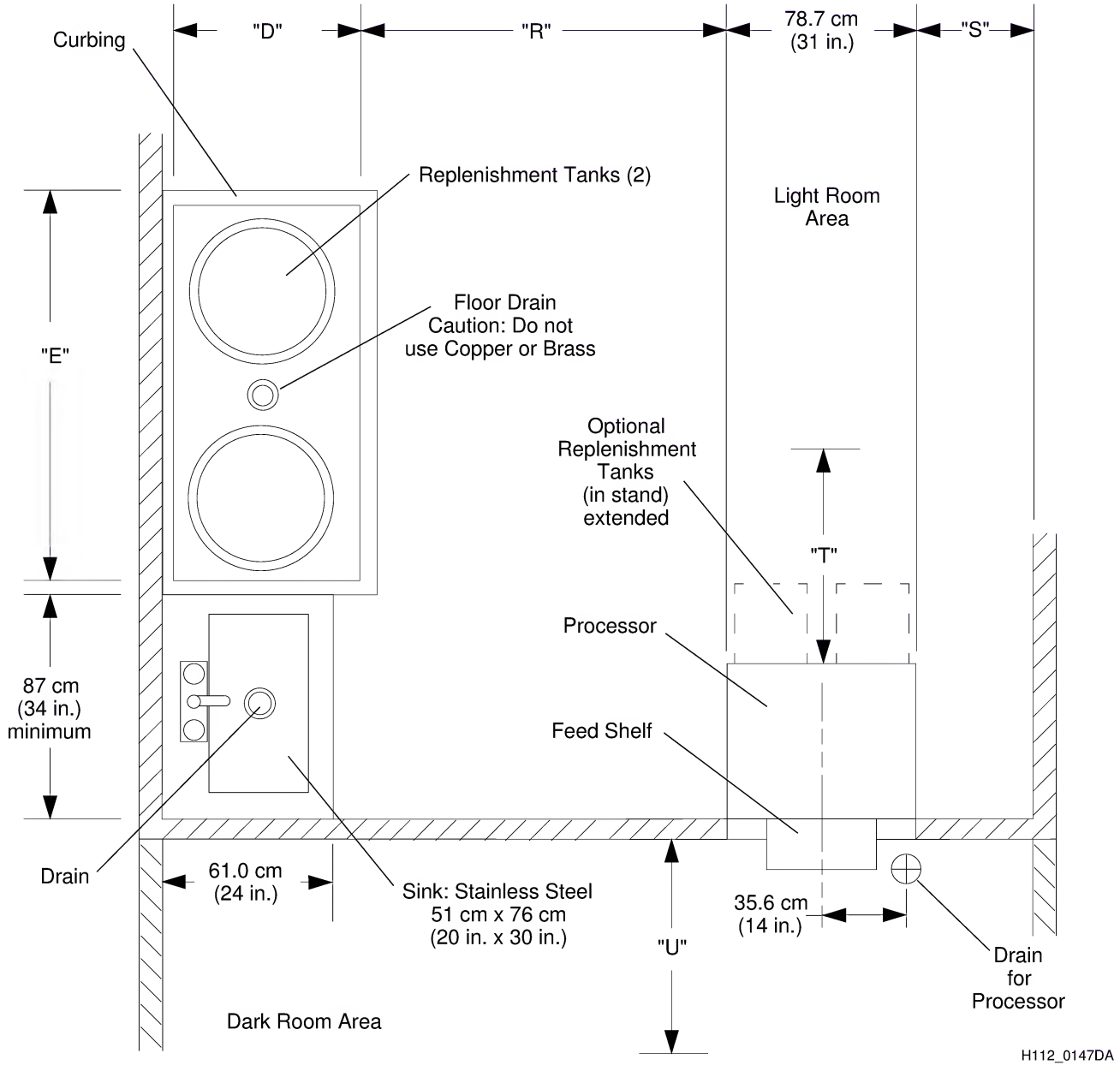
Note

The airflow should be toward the Processor.

(c) If the tissue paper moves away from the Processor, call Customer Support Operations for Health Imaging, Monday through Friday from 8:00 a.m. to 5:00 p.m. (Rochester, New York, time) at (800) 336-4722.

Section 5: Appendix A

Suggested Room Layout



Note

For dimensions "D", "E", "R", "S", "T", and "U", see the table on Page 8.

Related Publications

This publication is part of a series of instruction books that provides technical support information on the KODAK *M35, M35A, M35-M, and M35A-M* X-OMAT Processors. If you need an additional or replacement publication, order it through your Eastman Kodak Representative using the Publication Part Numbers below.

Publications for M35 and M35A Processors

	Complete Binder	Operator Manual	Site Specs	Installation Instructions	Service Manual	Parts List
Publication Part No.	981797	981158	981157	981159	981777	981778

Publications for M35-M and M35A-M Processors

	Complete Binder	Operator Manual	Site Specs	Installation Instructions	Service Manual	Parts List
Publication Part No.	981903	981799	981157	981900	981901	981902

Section 6: Site Specifications Publication History

Print Date	Pub No.	ECO No.	Affected Pages	Filename	Description
SEP92	981157	4014-318	All	3047ss_c.txt	This Site Specifications manual supersedes Publications No. 635815, 635036, 635983, and 636745. The previous Site Specifications for the M35, M35A, M35-M, and M35A-M Processors were combined into one manual, and the information updated. Called “PCN 1”.
SEP96	981157	-	All	ss3047_1_01sep96.doc	To reflect the new size Feed Shelf and add warnings about drain construction. Conversion to FrameBuilder.

ss304701.fm

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